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Speaking in Tongues?
Toward a Clearer Understanding of Language Effects on Latino Public Opinion

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Executive Summary

Background

The United States is teeming with linguistic diversity. The U.S. Census Bureau estimates that for every five people in America, one of them will speak a foreign language at home. Impressive, to be sure. But just as remarkable: of those individuals who use a non-English tongue at home, more than three fourths of them still indicate speaking English “well” or “very well.”

This multiplicity of languages is rapidly transforming many areas of public life, including the way pollsters measure public opinion in the United States. Not long ago, there was a time when gauging national opinion could be accomplished by simply querying survey respondents in English—America’s dominant tongue. However, the influx of Latinos and immigrants from other parts of the globe has added a new sense of urgency among public opinion analysts. If the goal is to sketch accurate and representative portraits of *public* opinion, then survey respondents must be allowed to interview in their language of choice, which might not necessarily be English.

In responding to this emerging reality, however, pollsters have largely overlooked the possibility that language may affect the direction and intensity of the opinions that individuals report. That is, language might shape the very attitudes and viewpoints people express through survey questionnaires. Clues about this possibility already exist across public opinion polls that expressly sample bilingual populations like Latinos. For example, some surveys reveal that Latino adults who interview in English correctly report more political facts about the United States than those who interview in Spanish. Why should that be the case if the question being asked is the same?

Toward an Explanation of Language-Opinion Effects Among Latinos

The following policy brief begins providing some answers to this broad question. Accordingly, it sketches a theory that explains why language should affect the opinions that Latinos report. This framework rests on three insights. First, like most people, Latinos do not possess ready-made attitudes to report when asked their opinions about public affairs. Instead, they carry around in their heads a mix of interrelated considerations—i.e., beliefs, knowledge, values, etc.—that serve as the raw material for opinion-formation. These considerations are lodged in long-term memory in a lattice-like network, where activation of one spreads to others. I claim that language influences opinion reports at two key points in this sampling process.

First, language influences the encoding of considerations. Encoding refers to the learning of new information and its integration with information previously stored in long-term memory. One crucial way that people append new data to memory is by

organizing it on the basis of shared features. One of those attributes, I claim, is the language of encoding – that is, the tongue Latinos learn a new consideration in. This implies that Latinos will encode information to memory on the basis of whether it shares a linguistic *tag* with previously stored data, which has implications for the recall of information from memory.

Recall, on the other hand, is the retrieval of considerations from memory to cobble together an opinion. Such recall often depends on the wording of survey questions. That is, different survey questions are likely to evoke a different set of considerations in memory. I claim that the language Latinos use to interview in affects this recall process. In particular, interview language guides *where* in long-term memory a survey question begins to activate a batch of considerations. If one answers survey questions in Spanish, then one is likely to base these reports on a sample of considerations consisting of mostly Spanish-tagged concepts. Ditto if the question-answering occurs in English.

Testing the Proposed Framework

I test this general argument across two online survey experiments with U.S. bilingual Latino adults. Both experiments centered on having bilingual Latinos *encode* information in either English or Spanish, and then having them *recall* that information to report opinions in either English or Spanish. Specifically, bilinguals read about *David Marin*, an ostensible job candidate in a national head-hunting agency's portfolio.

David Marin was described as someone who was planning to break into a new employment position in either the public- or private-sector. Subjects were tasked with reading closely the information provided about this individual to provide feedback about him to the head-hunting agency, so that he could be better matched to prospective employment opportunities. Since *David Marin* was considering employment positions that could potentially span across language markets, subjects were told that the information they read about him could be in English or Spanish.

The vignette that subjects read provided a short biography of *David Marin* (English) or *David Marín* (Spanish): a native of south Texas who joined the military as a young man; served several tours of duty during the Iraq War; and, returned home a decorated veteran to be with his family and launch a successful campaign for a seat in the U.S. Congress, where he now champions veteran's affairs. Beyond these broad details, no specific data were provided about *David Marin's* partisan or ideological leanings. After a distracter task following this vignette, all bilinguals answered a variety of survey questions about *David Marin*, as well as items focused on other aspects of politics.

The power of this experimental design is that bilinguals are learning about someone new, which means they must encode that data to memory in English or Spanish. That encoding was randomly assigned here. The design also encourages bilinguals to recall

information from memory, in either English or Spanish, to report their opinions, which also occurred on a random basis.

Main Findings

The results from this pair of experiments generally align with the proposed theoretical framework. In particular, these experiments show:

- First, across most attitudinal outcomes, bilinguals who encoded and recalled information about *David Marin* in English reported reliably different opinions than bilinguals who encoded and recalled the same information in Spanish. This affirms the view that encoding and recall play key roles in yielding language effects on Latino opinion.
- Second, the retrieval of information to report opinions is especially influenced by language. That is, recalling information in Spanish consistently and significantly impacted bilinguals' opinion reports, often irrespective of the language of encoding. This implies that language of recall helps to produce language-opinion effects by activating related considerations that were previously integrated into memory in the same language.

Conclusion

Together, these results begin to clarify how language shapes Latino opinion. Language, it appears, is not simply an administrative variable to record what tongues Latinos use to report their opinions. Rather, language seems to be a guide to the content in Latinos' minds, which provides the raw material for language differences in reported opinions.

Introduction

America's marketplace of language is teeming with diversity. Nowadays, for every five individuals in the United States, one of them is estimated to speak a foreign language at home.¹ That is 20% of American households where English intermingles with Spanish, Chinese, Vietnamese, Tagalog, and other assorted tongues. Indeed, out of those who use a foreign language at home, a grand majority – 78%, to be exact – report speaking English “well” or “very well.”²

This kaleidoscope of languages is rapidly transforming many areas of public life, very much including the administration of public opinion surveys in the United States. There, pollsters are urging other pollsters to furnish respondents with the option to interview in their tongue of choice. It's the “culturally competent” thing to do, leading practitioners advise us.³ By allowing survey respondents to interview in a language they are most comfortable with, pollsters stand to yield data that are more accurate, more reliable, and more representative of a population of interest. Thus, for those wishing to grasp the opinions of bilingual communities in the United States, such as Latinos, bending to this advice is a must.

But there is another reason why language can matter for survey takers, one that goes far beyond its role in facilitating the collection of higher-quality data – and one that, so far, has largely escaped systematic scrutiny by survey researchers. That is, language might shape the *responses* people offer when they interview. Clues about this expressive influence of language is scattered across a handful of published studies. For example, Latinos who interview in Spanish report reliably lower levels of knowledge about U.S. politics than those who interview in English,⁴ while Latinos who interview in English voice reliably higher levels of American identity than those who interview in Spanish.⁵

This language-opinion connection is observed with enough frequency among Latinos that a strong circumstantial case can be assembled in favor of language shaping their opinions.⁶ Curiously, though, no “smoking gun” exists to indict language as *the* cause of these shifts in Latino survey responses. Two crucial details are needed to nail down that charge. First, an actual theory is needed to clarify how, exactly, language shapes Latino opinion. Second, more conclusive evidence is needed to show that language – and language alone – drives differences in Latinos' expressed attitudes. What currently exists instead, however, is a grab bag of opinions that statistically vary by interview language, but without a firm sense about why these responses shift based on interviewing in English or Spanish.

This policy brief discusses my efforts to break new ground on these twin fronts. On the side of theory, I develop a framework that traces the influence of language on Latino opinion to a pair of key nodes in the opinion-formation process: encoding and retrieval. That is, Latinos learn about public affairs in different languages (encoding) and they

report their opinions about politics based on considerations they can more easily retrieve in those languages (recall). The interplay between these processes, I claim, can help to illuminate language's impact on Latino public opinion.

On the side of research design, I report on two experiments with bilingual Latino adults that isolate the influence of language – and language alone – on Latino opinion, particularly as it relates to the encoding and recall that is involved in forming and expressing one's opinions. These experiments suggest that language affects what Latinos learn about public affairs; how they integrate that new information with their pre-existing knowledge about politics; and – perhaps most importantly – how easily or not they can retrieve relevant considerations from memory to articulate an opinion.

What We Don't Know About the Language-Opinion Connection Among Latinos

Allowing Latinos to interview in English or Spanish allows researchers to sketch more representative portraits of Latino mass opinion.⁷ For example, some Latinos speak only one language, but it is not the one used to administer a poll (e.g., English). Other Latino individuals, in turn, will speak two or more languages, but may prefer to report their opinions in a language that is unavailable in a survey (e.g., Spanish). Finally, other Latino individuals will speak the tongue offered in a poll (e.g., English), but they represent only a slice of the larger Latino population. Yet to sample only this last segment because it is easier and cheaper is to mischaracterize Latino public opinion⁸ – especially if those individuals who interview in specific tongues hold varied attitudes and beliefs.⁹ Hence, as the United States becomes (even) more linguistically diverse, the use of multilingual polls is likely to continue growing.

But even as survey researchers interview individuals in varied tongues, a dense fog still hangs over *how* language impacts survey response. This haze envelops leading explanations of opinion formation, which suggest that survey responses hinge on the considerations that a survey question evokes – i.e., the values, beliefs, knowledge, identities, etc. that serve as raw material for people's opinions.¹⁰ These considerations are stored in long-term memory, which is organized associatively.¹¹ This means considerations are linked to each other in a lattice-like network where stimulation of one energizes others via spreading activation.¹² Once relevant considerations are aroused, they are recruited from long-term memory into working memory – the “top of the head” – where one assembles them into a response.¹³ Yet nowhere in these frameworks does language explicitly play a role.

This omission diverges sharply from what survey researchers are discovering.¹⁴ For example, some scholars find substantial correlations between interview language and opinions on several topics in the Latino National Political Survey (LNPS - 1988-89), a seminal study of U.S. Latinos.¹⁵ Other analyses reveal that such patterns also emerge in newer datasets, like the Latino National Survey (LNS - 2006).¹⁶ Moreover, some

research indicates that about one fifth of LNS respondents changed interview languages –from English to Spanish or Spanish to English – with this switching in interview languages shifting people’s opinions.¹⁷

These associations between individual opinions and language of interview are generally robust to rigorous statistical analysis and reproducible across several national surveys of Latinos.¹⁸ Yet their interpretation remains open to debate for methodological and – most importantly – theoretical reasons. Let us first start with the question of methodology.

Correlations, correlations, correlations

Most evidence that language affects Latino public opinion is derived from correlational studies of survey data that is representative of this population.¹⁹ Observing that individual opinions correspond with interview language is vital because it implies that Latinos’ opinion reports are influenced by the tongue they use to complete a poll. But the correlational nature of these studies raises concerns about omitted variable bias,²⁰ since interview language is self-selected by Latino respondents. This means that any association between an opinion and interview language could arise from the fact that both of these variables are correlated with a third variable that has not been taken into account. Scholars usually confront this threat by adjusting estimates of language effects for a litany of observed covariates (e.g., education, language proficiency).²¹ But this ignores unobserved differences between respondents and makes the generated results increasingly model dependent and hard to take seriously because the models are so “bloated.”²² Stronger evidence, then, is needed to bolster the claim that language causally impacts survey response.

Where is the Theory?

But even if this methodological challenge is resolved, there is an issue with theory – or rather, a relative lack of it. Prior studies of language effects on Latino opinion often focus on detecting this relationship and establishing its robustness. Less emphasis is placed on why language even impacts survey response at all; how these language effects occur; and when this linguistic influence is more (less) likely to occur.²³ Therefore, a more convincing case still needs to be made about the conditions under which language influences Latino survey responses.

Heeding Cognitive Psychology: Language and Latino Public Opinion

Although the study of language effects on survey response is bereft of strong theory, this does not mean a robust framework cannot be developed to account for this relationship. Indeed, within cognitive psychology, a sea of studies suggests that language shapes many aspects of human cognition. In particular, research shows that

language can influence how we construe time; how we reason about space; how we perceive objects; how we think about the self; and, even how we feel about outgroups.²⁴

Besides establishing that language shapes human thinking, cognitive psychology is also rich in insights about the mechanisms that make these language effects manifest. One of the most firmly established of these draws on what is known as the *encoding specificity* principle: the idea that people recall information more easily when there is a match between how they learned it (encoding) and how they draw it from memory (recall).²⁵

Seizing this insight, Viorica Marian and colleagues have shown that language facilitates memory recall when the tongue that is used to retrieve information (e.g., childhood memories) matches the tongue in which the content was acquired.²⁶ For example, in one study, Spanish-English bilinguals learned information about history, biology, chemistry, and mythology in both tongues. Subjects' memories were more accurate, and their recall faster, when they retrieved the material in the language they learned it in.²⁷ Similarly, another study asked Mandarin-English bilinguals to "name a statue of someone standing with a raised arm while looking into the distance." Subjects were more likely to say the *Statue of Liberty* when cued in English, but more likely to identify the *Statue of Mao Zedong* if cued in Mandarin.²⁸

Given this accumulation of knowledge regarding language's cognitive effects, one might wonder whether there is anything left to do. But if the goal is to explain how language impacts *Latino* opinion, then there is actually very much to accomplish. First, while many psychological studies show that language shapes people's mental representations of "space, time, substances, and objects,"²⁹ it is unclear how these insights apply to Latino survey responses, specifically. Second, most evidence of language effects on cognition has been yielded via lab experiments with small samples ($N < 50$) of college students or other convenience populations.³⁰ Doubts remain about how reproducible language effects are in a more heterogeneous and less controlled setting like a public opinion survey – and in samples of individuals who happen to be Latino. Finally, language effects are often criticized for being trivial,³¹ suggesting a need for evidence that language can reliably and meaningfully impact mass thinking on consequential outcomes, such as the political opinions that Latinos report.

In light of these blind spots, the next section begins sketching a theory that seeks to explain *how* language might impact Latinos' survey responses. I then describe a pair of survey experiments designed to test some basic implications of this framework.

Toward a Theory of Language Effects on Latino Survey Response

In a world where language *does not* affect opinions, we learned that survey response depends on the considerations that a survey question activates.³² By this view, survey questions spark considerations that are stored in long-term memory. Stimulation of one

consideration there energizes related ones via spreading activation.³³ Once relevant considerations are aroused, they are recruited from long-term memory into working memory – the “top of the head” – where one assembles them into an opinion. Thus, survey responses depend on the considerations made mentally accessible by survey questions.

But in a world where language *does* impact individual opinions, I argue that one’s sample of considerations is conditioned by the language of interview.³⁴ For example, let us say a Latino individual interviewing in English and another one interviewing in Spanish are asked: “How much of a majority is required for the U.S. Senate and House to override a presidential veto?” I reason that the information, or considerations, needed to answer this question is more easily recalled by the English interviewee rather than the Spanish interviewee because this data is more likely to have been acquired in English (consider that civic facts like these are typically taught in English, in American high schools). My basic claim, then, is that language shapes Latinos’ expressed opinions by influencing how considerations are *encoded to* and *retrieved from* memory.

Of course, this encoding and recall of considerations does not happen in a vacuum. When people learn new information in the world, they must figure out how to incorporate it into the trove of data they already carry in their minds. Prior research teaches us that individuals integrate and organize new information into long-term memory based on semantic similarity. As Collins and Loftus describe it, “[t]he more properties two concepts have in common, the more links there are between the two nodes via these properties and the more closely related are the concepts.”³⁵

For instance, consider a Latino adult who first learns about the politician, *Barack Obama*. Our Latino adult already likely carries around in memory some impressions of other Democratic politicians besides *Barack Obama* – and ones that are also atypical of most Democratic politicians, such as *Hillary Clinton*. Thus, we would expect this Latino adult to integrate the concept, *Barack Obama*, by placing it in close proximity in memory to *Hillary Clinton* on the basis of shared properties between both objects (i.e., both are politicians; both are Democrats; both were novel candidates in a party full of white men, etc.). Thus, for example, when asked to report opinions about Democrats, activation of the concept *Hillary Clinton* is likely to spread to the concept *Barack Obama*, thus leading to the recruitment of both concepts into the sample of considerations forming the basis of one’s expressed opinions about this party.

One implication that follows from this discussion is that Latinos might inscribe new concepts and considerations to memory based on whether they were learned in a specific tongue. In other words, the language of encoding might operate as a shared feature between concepts. This suggests that it is plausible for Latinos to encode new information to memory on the basis of linguistic *tags*, with these markers increasing the similarity between concepts and considerations, such as the objects *Barack Obama* and

Hillary Clinton. This notion of linguistic tags borrows from the work of Lodge and Taber, who argue that all concepts in memory are affectively labeled – that is, they are evaluated positively or negatively to a degree.³⁶ Thus, when a concept is activated, so is its affective charge. Applied to language effects on opinion, this reasoning suggests that activating a concept learned in one language is likely to activate related concepts that were also learned in that language, thereby providing another important avenue for observing language-opinion effects.

Research Design

Testing my claims about language effects on Latino opinion requires observing linguistic variation in the *encoding* and *retrieval* of considerations that form the basis of individual survey responses. It also demands strong evidence that language – and language alone – causes shifts in Latino opinion through these two psychological channels. What's the best methodological approach to accomplishing these goals?

My tool of choice here is a set of online survey experiments with bilingual Latino adults. When it comes to drawing inferences that changes in one variable cause shifts in another, experiments offer an unrivaled advantage.³⁷ By randomly assigning levels of a variable of interest – in this case, language – experiments allow me to compare Latinos who are alike in all respects, save for whether they had to encode and retrieve considerations in English or Spanish, which depends purely on chance. In other words, the only differences between these bilingual Latino adults is whether they learned about and recalled data in English, Spanish, or some combination thereof.

My focus on bilingual Latino adults, rather than simply Latino adults, also has a logic to it. Since my experiments aim to randomly assign Latinos to encode and recall information in English or Spanish, I need to ensure that all subjects who complete my experiment can do so without trouble in either of these languages. True, one could worry that by focusing on bilingual Latinos, any findings that emerge are limited to this boutique population. But bilingual Latinos are anything but boutique. Of all Latinos who use Spanish at home, nearly three fourths of them (74%) report speaking English well or very well.³⁸ That sounds like bilinguals to me.

Subjects

My experiments took place online in fall 2017, with Study 1 occurring in late September and Study 2 occurring in late October. In each study, which was described as a survey about “language, memory, and judgment,” U.S. bilingual Latino adults were recruited from Survey Sampling International's (SSI) panel of online survey respondents. By design, all subjects were ethnically Mexican. I made this choice in order to limit cultural variation between Latino ethnicities as a possible confounder of any language effects I uncover. While in the eyes of some, this choice may limit the extent to which any results

generalize to all Latinos, it is important to keep in mind that despite the heterogeneity of this pan-ethnic group, Mexicans still comprise about two-thirds of all Latinos, which means they faithfully reflect the larger ethnic group.

For both studies, bilingual Latino adults were identified based on whether they a) resided in the U.S. at the time of each study; b) self-reported Mexican ethnicity; and c) self-reported the ability to read, speak, and understand English and Spanish either “well” or “very well.” These efforts yielded 393 subjects for Study 1 and 1,713 subjects for Study 2, with each sample largely consisting of Latino bilinguals who were born and raised in the U.S., and who learned Spanish first and English second. These latter details will prove useful in interpreting the statistical results below.

Procedures

Both experiments shared the same design and were completed by subjects online via computer or tablet. Each study focused on having bilinguals *encode* information in either English or Spanish, and then having them *recall* that information to report opinions in either English or Spanish, thereby providing leverage over these two proposed language-opinion mechanisms.

More specifically, subjects first completed a short demographic questionnaire before being instructed to read about *David Marin*: a job candidate in a national head-hunting agency’s portfolio. *David Marin* was described as someone who was planning to break into a new employment position in either the public- or private-sector. Subjects were tasked with reading closely the information provided about *Mr. Marin* in order to provide feedback about him to the head-hunting agency, so as to better match him to prospective employment opportunities. Since *David Marin* was considering employment positions that could potentially span across language markets, subjects were told that the information they read about him could be in English or Spanish.

The vignette that subjects read provided a short biography of *David Marin* (English) or *David Marín* (Spanish): a native of south Texas who joined the military as a young man; served several tours of duty during the Iraq War; and, returned home a decorated veteran to be with his family and launch a successful campaign for a seat in the U.S. Congress, where he now champions veteran’s affairs. Beyond these broad details, no specific information was provided about *David Marin’s* partisan or ideological leanings.

Measures

Following a brief distracter task consisting of counting dots on a computer screen, subjects answered several survey questions about *David Marin* and other aspects about U.S. politics. Some of these questions directly queried subjects about specific details concerning *David Marin* mentioned in the vignette. Other questions required subjects to draw inferences about *David Marin* that went beyond the information given in his short

biography, which means they had to draw on other data already stored in memory. Moreover while some items asked subjects to make judgments about *David Marin*, others invited subjects to evaluate individuals and groups related to, but distinct from him, such as former veterans-turned-politicians, John McCain and Colin Powell. This variation in survey questions will allow me to illuminate the degree to which language affects the recall of additional considerations recruited to express one's opinions, well beyond the effects of new information that is encoded.

David Marin's Ideology

Using a 7-point scale, subjects were asked to rate *David Marin's* ideology, from very liberal (1) to very conservative (7). Thus, higher values here reflect greater perceptions of *David Marin* as being ideologically conservative.

Political Impressions about David Marin

Based on a 4-point scale, subjects completed three survey questions asking them to indicate how well certain traits described *David Marin*. The three specific traits were "provides strong leadership," "knowledgeable," and "inspiring," with responses running from not well at all (1) to extremely well (4). I combine this trio of survey questions into an index, normed to a 0-1 range, such that higher values reflect a stronger, positive impression of *David Marin*.

Knowledge about David Marin

Subjects answered three open-ended, factual questions regarding details about *David Marin* that were explicitly mentioned in the vignette about him: 1) the state he was born in (Texas); 2) the first year he was elected to office (2016); and 3) the war that he served in (Iraq War). Each correctly answered item received a score of 1, with incorrect and other responses receiving a score of 0. I also combine these items into a scale, normed to a 0-1 range, where higher values reflect more factual knowledge about *David Marin*.

Patriotism Toward the U.S.

In addition, subjects used a 4-point scale to express how proud the "American national anthem" and the "American flag" made them, with replies ranging from not proud at all (1) to very proud (4). I transformed this pair of items into a 0-1 scale, where higher values reflect greater patriotism toward the U.S.

Favorability toward Military Figures

Finally, using a scale ranging from extremely unfavorable (0) to extremely favorable (10), subjects reported their favorability toward *David Marin* and other political objects. The latter included military objects, specifically, "American war veterans," "The U.S. Military," "Senator John McCain," and "Ex-general Colin Powell." I folded these

favorability ratings of David Marin and other military objects into a scale, normed to a 0-1 range, where higher values reflect greater favorability toward military figures.

Results

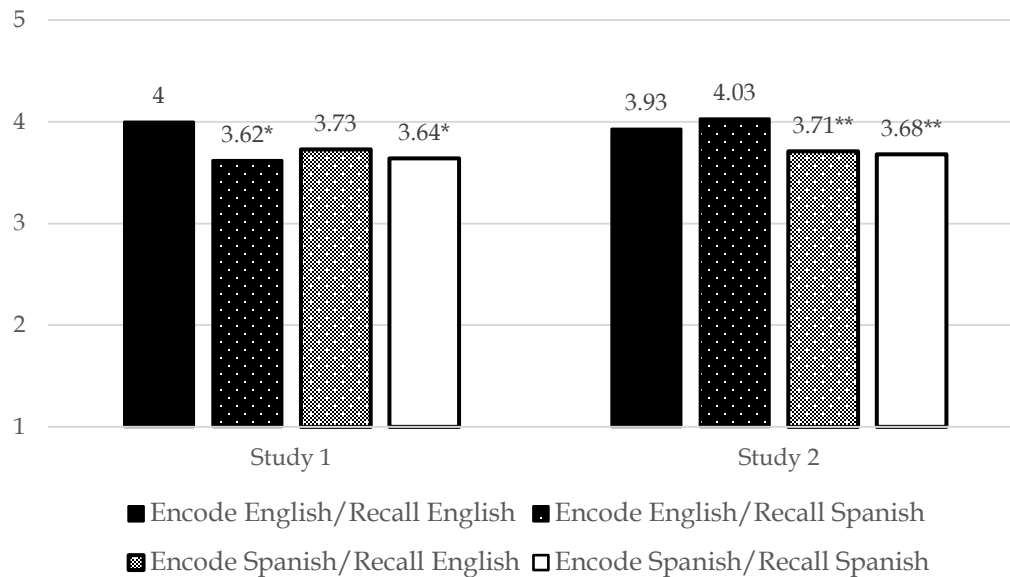
My experiments allow a peek into the influence of language at two key points in the opinion-formation process: the learning of information (encoding); and the retrieval of that information to express one's opinions (recall). Hence, I can observe subjects' reported opinions when the language of encoding and retrieval is matched, as well as when the language of encoding and retrieval is mismatched. For all opinions analyzed below, I will first compare bilinguals who encoded and recalled information entirely in English to those who did so entirely in Spanish. This will give us the clearest sense of any language effects in survey response. I will then dig deeper into any language effects by examining the mismatched conditions, which will allow me to say whether any observed language effects are driven by encoding in certain languages, recalling in certain languages, or some combination thereof.

David Marin's Ideology

Let's begin with subjects' ratings of *David Marin's* ideology. Remember, in the vignette about *David Marin*, subjects were not provided explicit information about this individual's political ideology. That is, subjects were not expressly told that he was liberal or conservative. Instead, he was described in general terms, with broad details about his personal life (e.g., born and raised in south Texas) and professional career (e.g., served in the military and successfully ran for U.S. Congress), thus providing fragments of information about him that subjects could then combine with information they already possess about U.S. politics in order to piece together an assessment of *David Marin's* ideological bent. By design, then, subjects should be finding themselves in need of drawing on additional and related considerations already stored in their long-term memory in order to complete this assessment.

Figure 1 displays subjects' average ratings of *David Marin's* conservatism grouped by study and experimental condition. Let's start with Study 1. The left-most black column there reveals that bilinguals who encoded and recalled information about *David Marin* in English generally judged him to be ideologically moderate, with an average score of 4.00 falling right at the midpoint of the 1 to 7 scale used to answer this item. However, when subjects rated *Marin's* conservatism after encoding and recalling information about him in Spanish, they rated him as significantly more liberal (3.64): a shift that is reliably different than zero, as indicated by the asterisk attending this value.

Figure 1. Rating of David Marin's Ideology (1-7 scale)



This pattern appears to suggest that use of Spanish lead subjects to encode information about *David Marin* by integrating it into a distinct network of related concepts and considerations that all share a Spanish tag. That is, subjects who encoded information about *David Marin* in Spanish integrated that data into a network of related concepts that were all previously learned in Spanish, such as one's ideas about politicians, ideology, and war veterans. Thus, when recalling additional data from memory to rate *Marin's* ideology, subjects recruited considerations that share a Spanish tag, which helps to produce the language gap in ratings of *Marin's* ideology.

Confidence in this dynamic is bolstered by Study 2's results, which generally replicate those in Study 1. Figure 1 shows that in the baseline condition, where subjects encoded and recalled information in English, subjects rated *David Marin* as an ideological moderate, with a score of about 3.93. But when subjects encoded and recalled information about *Marin* in Spanish, they rated him as more liberal (3.68), a shift that is reliably different than zero, as indicated by the asterisk on this latter value.

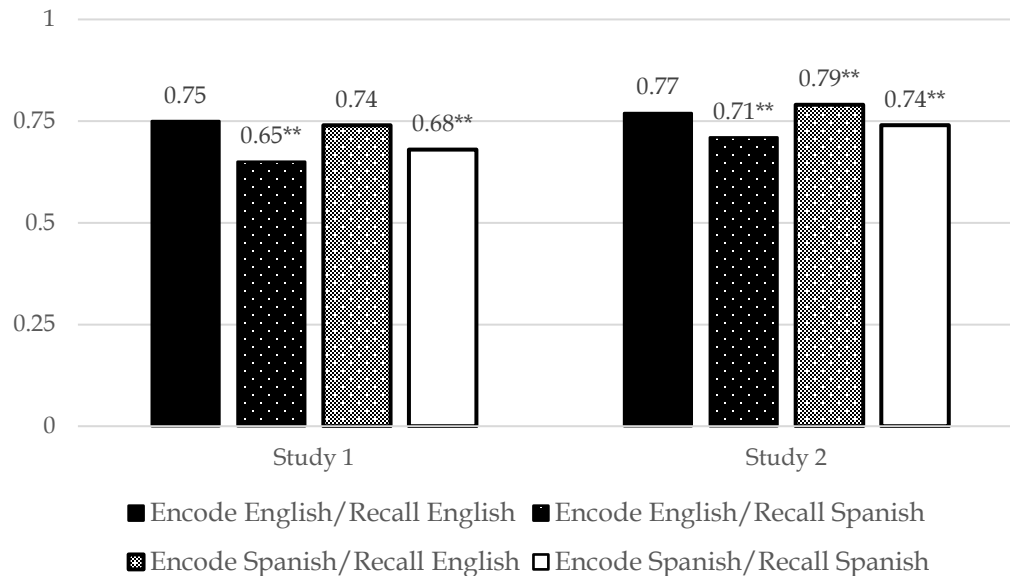
At first blush, the comparison between these two experimental conditions — where subjects encode and recall information about *David Marin* in English, and where subjects conduct the same tasks in Spanish — suggest that language has the predicted effects. Yet inspection of the remaining conditions reveal a more nuanced set of findings. Looking again at the results for both studies, one can see that in the two remaining conditions with the dotted bars, subjects generally rated *David Marin* as more ideologically liberal in comparison to those subjects in the baseline condition (solid black bar). This indicates that any deviation from English, either at encoding or recall, is

enough to produce significantly different opinions among Latinos, with the recalling of information in Spanish having an especially consistent effect.

Political Impressions of David Marin

The preceding findings do not appear to be a fluke. Figure 2 displays subjects' political impressions of *David Marin*. There we see that subjects who encoded and recalled information about *Marin* purely in English reported very positive impressions of him, with an average rating of .75 and .77 in Study 1 and Study 2, respectively (solid black bars). In contrast, subjects who learned and retrieved information about *Marin* in Spanish reported reliably less positive impressions of him (solid white bars). This, again, suggests that subjects learned and stored information about *Marin* by organizing it with related information sharing the same linguistic tag.

Figure 2. Positive Impressions of David Marin (0 - 1 scale)



Further inspection of the remaining conditions within each study yield insights that align with those for ratings of *Marin's* ideology. More specifically, the dotted bars within each study suggest that in comparison to subjects who encoded and recalled information about *David Marin* in English, those who encoded or recalled information about him in Spanish generally express reliably less positive impressions of him, with those who recall information about him in Spanish displaying an especially consistent effect in this direction. This fits with the view that language effects like these are shaped, in part, by how subjects integrate new data about *David Marin* with pre-existing information about related objects (e.g., politicians, war veterans, etc.).

Knowledge about David Marin

To this point, we have seen that reliable differences of opinion between Latino bilinguals arise when they use Spanish to encode and/or recall information about an attitude object (i.e., *David Marin*). But so far, the outcomes we have investigated involve opinions about *Marin* – that is, evaluations of this individual that do not necessarily have a right or wrong answer. What occurs when we examine the impact of language on “harder” outcomes, such as factual information about *David Marin*?

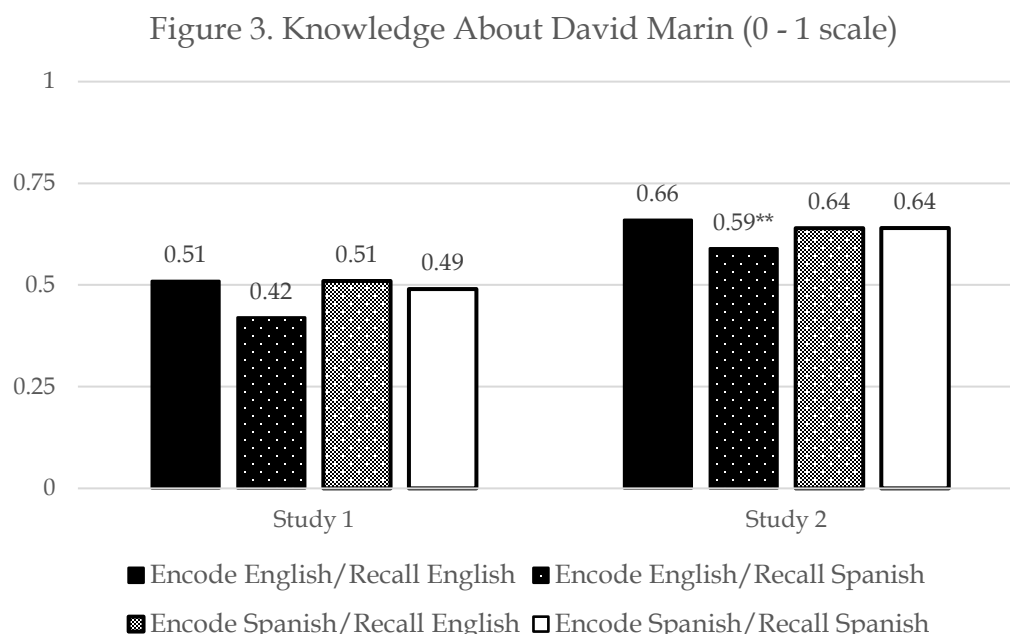


Figure 3 provides some clues. The results depicted there capture the effects of language on a scale of knowledge, specifically, the degree to which subjects are able to recall the U.S. state *Marin* was born in; the first year he was elected to office; and the war he served in. In the baseline conditions of both studies, where subjects learned and recalled information about him in English, subjects learned anywhere from half (.51) to two-thirds (.66) of these facts, which is consistent with prior work on political knowledge levels among individuals in the U.S.³⁹ But how does the use of Spanish among some subjects affect this reporting?

Figure 3 seems to indicate that hardly at all. In comparison to those subjects who encoded and recalled factual information about *David Marin* in English, those who did so in Spanish are no less likely to report knowledge about this political figure (solid white bars). Moreover, the use of Spanish during either encoding or retrieval also reveals few consistent and reliable impacts on one's reporting of knowledge regarding *Marin*. Thus, unlike in the realm of reporting attitudes, when it comes to reporting

factual information, language seems to hardly make a difference at either the encoding or retrieval stage of opinion-formation.

Why would this be the case? The most plausible answer, in my view, has to do with the nature of these survey questions. These items, remember, require subjects to report factual information about a political object (*David Marin*) that they are unlikely to have any information about since he is a hypothetical figure. This means that as subjects encounter information about this new object, they either encode facts about him or they don't. But language should not enhance or decrease one's ability to answer these questions because there is no other way of completing them except to report the nugget of information that is being asked for. In other words, the additional recruitment of considerations that enables subjects to complete attitudinal questions is stunted here.

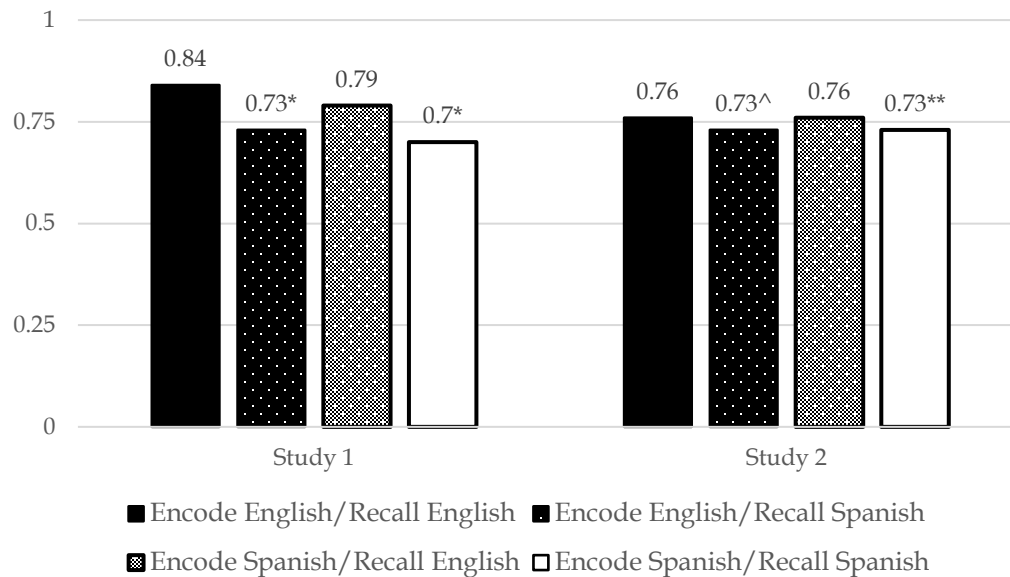
Patriotism Toward the U.S.

Failure to find consistent and reliable language effects on subjects' reporting of factual information about *David Marin* aligns with what we know about the opinion-formation process. If the expression of opinion involves the recruitment of related considerations when one is asked a survey question, then it stands to reason that other factual beliefs about *David Marin* should be activated. But *David Marin* is hypothetical and new to our subjects; which is to say, there aren't really other factual beliefs about him to recruit beyond the ones they were exposed to in this simple experiment.

But in the case of attitudinal reports, additional considerations are easier and more likely to be recruited beyond the basic details that people learned about *David Marin*. For example, while *David Marin* is hypothetical and new, he is unlikely to be the first politician that subjects learn information about or the first time that they are exposed to ideologically conservative cues, military details, and patriotic symbols. Thus, while *David Marin*, specifically, might be new to our subjects, they are likely to integrate data about him into pre-existing information about the political world that they have already stored in long-term memory.⁴⁰

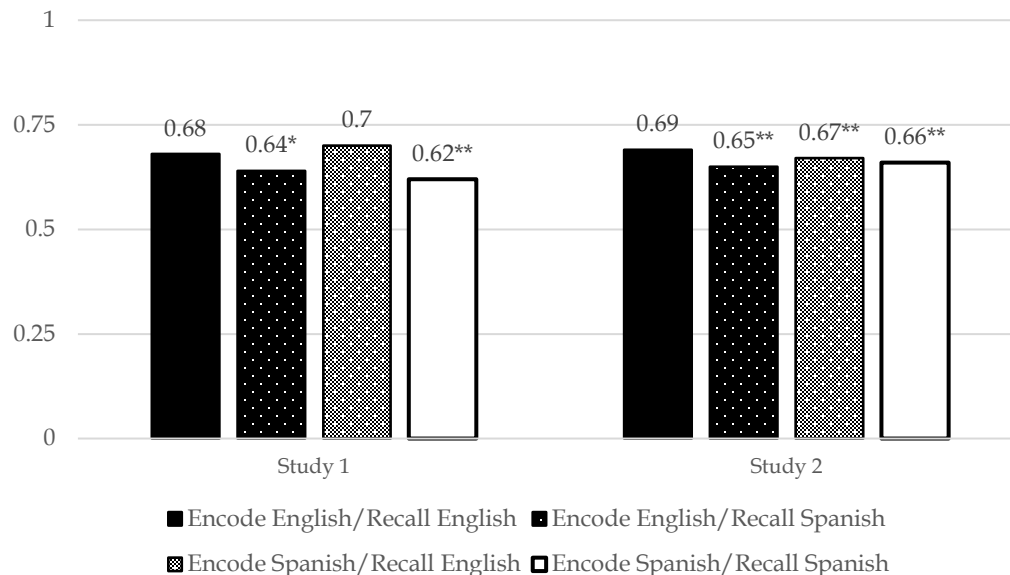
Consistent with this view, figure 4 depicts subjects' expressed levels of U.S. patriotism across all conditions in each study. There we see that subjects who encoded and recalled information in English report a very high degree of patriotism. On a scale from 0 to 1, subjects in Study 1 score at .84 and those in Study 2 score at .76 (solid black bars). In contrast, subjects who encoded and recalled information in Spanish reported reliably less patriotism across both studies (solid white lines). Inspection of the other two conditions sandwiched in between these reveals that the reductions in patriotism are produced by recalling and sampling considerations in Spanish. This, again, suggests that the information subjects encountered in the treatment was better integrated into memory alongside other fragments of information already accumulated in English.

Figure 4. Expressed U.S. Patriotism (0 - 1 scale)



In line with this interpretation, figure 5 displays subjects favorability ratings of sundry military objects and figures, such as Congressman *Marin* (who served in the Iraq War) and U.S. war veterans like John McCain, and Colin Powell – all of which are highly correlated. Indeed, these robust inter-correlations further supports the idea that subjects encoded and stored information about *David Marin* alongside pre-existing information they had already acquired about the military. That pre-existing information, however, appears to be linguistically tagged, since recalling considerations in Spanish to report one's favorability ratings of these objects is consistently affected by that language.

Figure 5. Favorability Toward Military Figures (0 - 1 scale)



For example, across Study 1 and 2, subjects who encoded and recalled information about *David Marin* in English report a strong degree of favorability toward military figures (.68 and .69, respectively, on a 0-1 scale). This level of favorability, however, drops reliably when encoding and recalling information about *David Marin* in Spanish (white bars). Further scrutiny of the additional conditions per each study suggest that irrespective of encoding, recalling information in Spanish produces this same decline in favorability ratings. This underlines that the retrieval of information from memory is guided, in part, by a mental search for considerations that share a linguistic tag.

What Have We Learned – and Where Do We Go Next?

This policy brief started by highlighting two limitations in our knowledge about language effects on Latino opinion: a methodological one involving the isolation of language's causal influence on survey responses; and a theoretical one revolving around the absence of a firm framework to guide our expectations about language-opinion effects. The efforts reported begin remedying these blind spots. While my experiments establish, by design, the causal effect of language on Latino opinions, the framework I sketched explains, more clearly, how language affects Latino opinion.

Language-opinion effects, my experiments suggest, can be partly traced to the encoding of information in one's environment. In particular, it seems that Latinos integrate new data about the political world around them by organizing it on the basis of linguistic tags – that is, whether new and old information were originally learned in English or Spanish. That is not the only basis, of course. Prior work teaches us that new information is appended to old information in long-term memory on the basis of shared attributes between concepts.⁴¹ But insofar as concepts are linguistically tagged, it suggests that activation of one concept in memory will, perforce, activate other related concepts *that share that linguistic tag*.

That seems to be the most reliable finding across my studies: retrieving considerations from memory in a specific tongue facilitates the arousal of additional information in memory that were previously encoded in that tongue. Consequently, when Latinos report an opinion, they do so by sampling considerations from a part of long-term memory where all the activated considerations share a linguistic tag. This simple process is enough to nudge Latinos' opinions in distinct directions. Indeed, across my studies, consistent language-opinion gaps emerged – not so much when subjects encoded information in Spanish instead of English – but rather, when subjects *retrieved* considerations from memory in Spanish, rather than English. This suggests that language of retrieval is a key force behind language-opinion effects.

Notwithstanding the novelty of these findings, however, two experiments are simply not enough to clinch an argument in favor of any theoretical framework, including my own. There is plenty more to learn about language-opinion effects among Latinos,

especially if we consider this an ongoing effort to more fully understand this phenomenon.

One useful direction to consider in the future is an examination of the same dynamics, but in samples of bilinguals who have learned most of their considerations in Spanish. The bilinguals studied here, on average, consist of U.S. residents who began learning English after Spanish at a very young age. These are characteristics of individuals who have spent a long time in the United States, which is another way of saying that – despite their bilingual ability – much of the information they have encountered and integrated to memory is likely to be suffused in English. For this reason, then, it is perhaps unsurprising that recalling considerations in Spanish had such consistent effects on Latino opinion reports in both of my studies. Thus, it would be useful to consider whether comparable effects emerge when English is the language of recall in a sample of Latino bilinguals who have spent most of their life in a Spanish-speaking country, rather than an English-speaking nation.

Another useful extension to consider is broadening the type of outcomes that have been analyzed here. The types of dependent measures under scrutiny here have been a good start, as they combine a mix of attitudinal and factual opinions. However, missing from the attitudinal set of items are survey questions that more directly tap into domains like public policy preferences: a domain that is well known to be influenced by the basic belief-sampling mechanisms underpinning my analyses.⁴² In addition, it would be useful to consider how language might shape people's *implicit*, rather than explicit attitudes. In the past 25 years or so, psychologists have been teaching us that much of human thinking occurs spontaneously, uncontrollably, and often without our awareness, with implicit attitudes being one of the outputs yielded by this type of cognition. These unspoken and highly affective evaluations typically precede our more conscious thoughts and beliefs – and they can be measured.⁴³ Thus, appraising the impact of language on implicit attitudes would illuminate how deeply engrained language effects are in the minds of Latinos, as well as pinpoint where in one's cognitive stream they take hold.

Still, inasmuch as these extensions are appealing, it is useful to acknowledge how the evidence in this brief already improves on our previous understanding of language-opinion effects. Consider that in the absence of the evidence reported here, our collective understanding of language effects on Latino opinion was tentative, hesitant, and loaded with caveats. Yet in light of my evidence, our confidence in language's ability to shape Latino opinion through two specific mechanisms is bolstered. Incremental as these gains might seem, this is the pace at which breakthroughs are collectively made by social scientists. The domain of language-opinion effects is no different, and I hope my efforts here encourage other scholars to continue studying the important connections between language and Latino public opinion.

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